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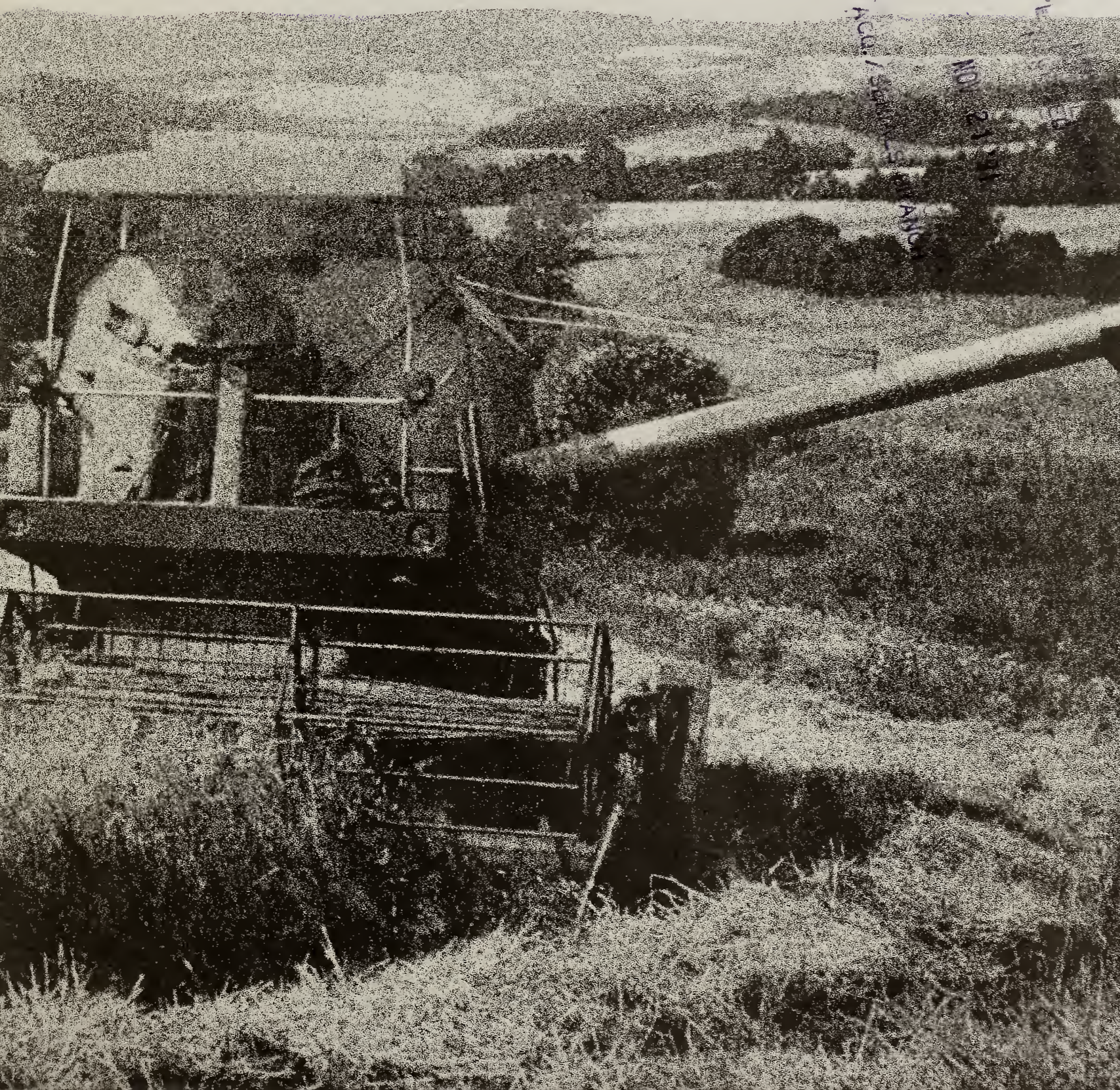
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A Survey of Czechoslovakia's Agriculture

Robert Cummings



COVER PHOTO

Grain harvesting on a collective farm. Photo courtesy of the Embassy of the Czechoslovak Socialist Republic.

A SURVEY OF CZECHOSLOVAKIA'S AGRICULTURE. By Robert Cummings, International Economics Division, Economic Research Service, U.S. Department of Agriculture. Foreign Agricultural Economic Report No. 171.

ABSTRACT

Czechoslovakia is one of the most industrialized countries in Eastern Europe, and agriculture plays a minor role in the economy, contributing only 10.5 percent of national income in 1980. Of the arable land, 94 percent is held in socialized ownership, but private production supplies a large share of meat, livestock products, fruits, and vegetables. The emphasis of current agricultural policy is on attaining self-sufficiency in grain production to reduce costly imports. Furthermore, under the seventh Five Year Plan (1981-85), crop production will grow faster than livestock production and cattle and sheep raising will be stressed rather than pig and poultry raising. Czechoslovakia is a net agricultural importer. The United States ranked as its 13th largest trading partner in 1980, providing most of the corn and a large portion of the oilseed and meal imports.

KEYWORDS

Czechoslovakia, agricultural organization, policy, inputs, production, and trade, agricultural prices and subsidies, food consumption.

Metric units are used throughout:

1 metric ton =	2,204.6 pounds
1 kilogram =	2.2046 pounds
1 hectare =	2.471 acres

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SUMMARY

U.S. agricultural exports accounted for almost 60 percent of all U.S.-Czechoslovak trade in 1977-81. To maintain or increase these exports in the eighties, U.S. exporters will face institutional problems within Czechoslovakia--a shortage of foreign exchange, plans to reduce reliance on costly imports by increasing domestic output, and a general slowdown in economic growth. U.S. producers of key commodities will find it tougher to penetrate the Czechoslovak market as authorities strive to import as much as possible of Czechoslovakia's grain and oilseed requirements from other East European countries before turning to Western supplies. The United States is Czechoslovakia's 13th largest trading partner. Total trade is small--\$164.2 million in 1981.

Agriculture plays a minor role in Czechoslovakia's domestic economy. Czechoslovakia is one of the most industrialized and affluent countries in Eastern Europe; per capita gross national product (GNP) in 1979 was \$5,040 and, after the German Democratic Republic (GDR), was the highest in the region. Agriculture contributed 10.5 percent of national income in 1980, and in the seventies, the share of total investment in this sector hovered around 10 percent. Both shares are quite low for Eastern Europe. Only 10.3 percent of the labor force engages in agriculture. In 1980, agricultural goods accounted for 16.2 percent of the value of all imports and only 8.8 percent of all exports--again, among the lowest shares in the region.

Agriculture in Czechoslovakia is highly diversified. Wheat, barley, corn, oats, rye, rapeseed, potatoes, sugar beets, and hops are the main crops. The major growing areas are in southwestern and eastern Slovakia and in southern and western Bohemia.

Although 94 percent of arable land is held in socialized ownership (state and collective farms), private production supplies significant fruit, vegetable, and livestock-product output. The private sector has recently emerged from a period of eclipse as the Government seeks to increase production without recourse to extensive investment in the collective and state sectors.

The main agricultural goals of the Czechoslovak Government in the seventh Five Year Plan (1981-85) are self-sufficiency in grain production (average annual grain imports in 1976-80 equaled 1.68 million metric tons), increased forage production, and a shift in meat production from grain-intensive pork and poultry to beef and mutton production.

Crops currently account for approximately 42 percent of the value of agricultural output, with livestock accounting for the remaining 58 percent. This distribution should change in favor of crops as authorities stress expanded crop over livestock production in 1981-85.

Annual livestock inventories for all animals rose from 1971 to 1980, but no growth trend was evident. Pork production accounts for 56 percent of all meat output, and historically, pork has been the major meat in the Czechoslovak diet. In recent years, the press has carried reports of poorly balanced livestock feed rations that contain too much grain and not enough forage. This situation has reportedly led to weight gain problems, especially in cattle, and is decried as wasteful in view of the need to reduce grain imports by utilizing domestic forage supplies more fully.

Czechoslovakia depends heavily on foreign trade. In 1980, total trade accounted for 36 percent of GNP, three times the share for the United States. Finished industrial commodities and raw materials make up the bulk of traded goods. Socialist countries are the primary suppliers of Czechoslovak imports of fruits and vegetables, cotton, and meat. Western nations supply the bulk of vegetable oil and fat, coffee, tea, cocoa, feed-grain and protein meal imports.

A Survey of Czechoslovakia's Agriculture

By Robert Cummings

INTRODUCTION

U.S. trade with Czechoslovakia has been handicapped by several political and economic factors. Chief among these has been the inability of the two nations to reach agreement on the financial claims disputes following World War II--both those of U.S. citizens arising from nationalizations carried out by the Government of Czechoslovakia and those of Czechoslovakia regarding Czechoslovak gold seized after the war. On December 29, 1981, the President signed legislation allowing return of the gold in exchange for a mutually agreed Czechoslovak settlement of U.S. claims, thus removing an important barrier to U.S.-Czechoslovak economic relations.

U.S. agricultural exports account for almost three-fourths of all U.S.-Czechoslovak trade. To maintain or expand this share into the eighties, U.S. exporters will face institutional problems within Czechoslovakia--a shortage of foreign exchange, plans to reduce reliance on costly imports, and a general slowdown in economic growth. U.S. producers of key commodities will find it tougher to penetrate the Czechoslovak market as authorities strive to import as much of Czechoslovakia's grain and oilseed requirements as possible from other East European countries before turning to Western supplies.

This report updates the U.S. Department of Agriculture's first Survey of Czechoslovak Agriculture issued in 1962. As the United States does not maintain a permanent agricultural attache in Prague, reports such as this one provide U.S. farmers and business people with basic economic information on which to assess agricultural marketing activities in that country.

BACKGROUND

Czechoslovakia, a nation in central Eastern Europe, is bordered by the German Democratic Republic (GDR), the Federal Republic of Germany (FRG), Poland, the Soviet Union, Hungary, and Austria. Total land area is 12.8 million hectares--about the size of New York State--41 percent of which is arable. The country is made up of two constituent republics: Slovakia in the east and the Czech lands of Bohemia and Moravia in the west.

Population in 1981 was 15.3 million people--68 percent of whom live in Bohemia and Moravia and 32 percent in Slovakia. The rate of annual population growth has been declining since 1973 and was just under 0.03 percent in 1981. Czechoslovakia's population growth rate, although low, was still above the rate for Eastern Europe as a whole.

Gross national product (GNP) converted at U.S. purchasing power equivalents was \$76.6 billion in 1979 (current dollars), ranking behind Poland, the GDR, and Romania. However, on a per capita basis, Czechoslovakia at \$5,040 in 1979 was only slightly behind the GDR (which has the highest per capita GNP in Eastern Europe) and about 11 percent below the per capita GNP for Italy (table 1).

The topography is varied with mountain ranges interspersed with plateaus and lowlands. Soil types range from mountainous stony soils to peat and saline soils in the lowlands. Thus, Czechoslovak agriculture is highly diversified with grain, oil-seeds, fruits, vegetables, tobacco, sugar beets, hops, and flax cultivated. Farming takes place principally on the forest soils of the Bohemian plateau of western Czechoslovakia, where annual rainfall averages between 20 and 25 inches, and in the slightly more humid plains of southern and eastern Slovakia. Most meadow and pasture lands are located in central and northeastern Slovakia. The climate is temperate.

AGRICULTURE IN THE ECONOMY

In 1980, agriculture contributed 10.5 percent to national income, one of the lowest shares in Eastern Europe (table 2). Since 1960, agriculture's contribution to national income has declined by a third, from 15.3 percent to the current level. This low share is not surprising as Czechoslovakia is one of the most industrialized countries in Eastern Europe. The agricultural production growth rate is among the slowest in Eastern Europe (an average annual rate of 1.9 percent in the seventies). Under the 1981-85 Five Year Plan, agricultural output is planned to increase 10 percent over the preceding period.

Table 1--Czechoslovakia: Gross national product (GNP), per capita, selected years, 1965-79

Year	:	Dollars	:	Index
	:		:	
1965	:	3,277	:	100
1970	:	3,830	:	117
1975	:	4,400	:	134
1979	:	5,040	:	154

Source: Handbook of Economic Statistics, National Foreign Assessment Center, Central Intelligence Agency, 1979.

Table 2--Czechoslovakia: Agriculture's share of major economic indicators, 1980

Indicator	:	Agriculture's share
		Percent
National income	:	10.5
Labor force	:	10.3
Exports	:	8.8
Imports	:	16.2

Source: Statistika Rocenka CSR, 1981, and other official data.

About 10.3 percent of the full-time labor force was employed in agriculture in 1980 (897,567 individuals), down from 16.8 percent in 1970. Agricultural commodities accounted for 16.2 percent of the value of imports, but only 8.8 percent of exports in 1980--one of the lowest shares in Eastern Europe. Agriculture's share of total investment during the seventies ranged from 9.9 percent in 1970 and 1971 to 11.5 percent in 1975.

ORGANIZATION

In 1980, 94 percent of the agricultural land in Czechoslovakia was held in socialized ownership, one of the highest rates in Eastern Europe. Collective farms held about 63 percent of agricultural land, of which only 2.4 percent was in household plots; state farms held 31 percent. The share of state farm holdings of agricultural land has remained constant since 1970 and that of collective farms has increased from 55.7 percent, whereas the share in private plots on collective farms has fallen from 7.3 percent. Private agriculture's share of agricultural land holdings (excluding private plots) has fallen since 1970, when it was 10 percent of all such land. Table 3 shows the share of the major agricultural inputs in the socialized sector.

Private agriculture plays a small, but important, role in agriculture. As most private farms are concentrated in the mountains where large collective farms are impractical, the emphasis there is on livestock husbandry. Thus, a significant percentage of Czechoslovakia's milk, pork, and eggs is produced on private farms. Approximately 40 percent and 70 percent of total vegetable and fruit production, respectively, come from private agriculture and private plot production. ^{1/} Private plot size is limited to 0.25-1.0 hectare depending on geographic

^{1/} Report to the 16th Congress of the Czechoslovak Communist Party (CPCZ) delivered by Premier L. Strougal as reported by the Prague Domestic Service, Apr. 17, 1980.

Table 3--Czechoslovakia: Agricultural inputs in the socialized sector

Input	Socialized sector, total	Socialized sector, excluding private plots
	Percent	
Arable land	97.6	95.8
Employment	98.3	N.A.
Tractors	86.7	86.7

N.A. = Not applicable.

Source: Statisticka Rocenka CSR, 1981.

region and size of the farmer's family. ^{2/} Table 4 compares socialized- and private-sector production of selected agricultural products.

POLICY

All sectors of the economy are centrally planned and are administered according to guidelines provided by 5-year plans, currently by the seventh Five Year Plan, 1981-85. In agriculture, central authorities set production targets for all crops, livestock, and livestock products plus producer prices and, for most foodstuffs, consumer prices. Agricultural

Table 4--Czechoslovakia: Socialized- and private-sector shares of agricultural output, 1980

Commodity	Socialized-sector production	Private farm and private plot production
	Percent	
Grain	96.3	3.7
Potatoes	80.0	20.0
Meat	<u>1/</u> 72.9	<u>2/</u> 27.1

1/ Including output from private plots.

2/ Output from private farms only.

Source: Statisticka Rocenka CSR, 1981.

2/ "Czechoslovak Situation Report/149," Radio Free Europe Research Bulletin, Dec. 17, 1975.

policy is determined at the central level and, since 1979, the authority of the agricultural ministry and midlevel managers in day-to-day agricultural affairs has increased at the expense of that of local agricultural officials.

Authorities have recently modified their support for a major agricultural policy during the seventies which committed the Government to an improved national diet based on increased availability of livestock products. This policy necessitated raising imports of livestock feed which have become an increasing burden on the economy. As a result, the Government's most important agricultural goals for the eighties are to make Czechoslovakia self-sufficient in grain production and to limit the growth rate of livestock product consumption. In line with this policy, crop production is planned to increase faster than animal husbandry in 1981-85. Because of tight labor supplies and insufficient investment funds, the Government counts on more intensive and efficient use of agricultural resources to increase production. Policies of reducing subsidies to state farms, raising living standards in the agricultural sector, increasing producer prices, and expanding intra-enterprise cost accounting (khozraschet) are expected to improve agricultural efficiency and to make farming more attractive to the rural labor force.

The increasing emphasis since the midseventies on achieving self-sufficiency in livestock feed and grain production has led to important administrative and organizational changes. To increase agricultural production, the Government began a campaign in the midseventies for the formation of large, centrally directed agro-industrial enterprises combining agricultural producing and processing enterprises. These agro-industrial enterprises were to lead to production specialization allowing for increased efficiency and higher technical levels of production.^{3/} As a result of this policy, the size of collective and state farms has increased while their number has fallen (table 5).

The campaign for agro-industrial enterprises was combined with efforts to further reduce the economic importance of private farmers and of collective members and state farm employees working on their private plots. All resources in the agricultural sector, public and private, were to be funneled into the agro-industrial campaign.

In line with its policy of agricultural consolidation, the Government adopted a new collective farm statute in 1976. This statute increased the authority of farm management vis-a-vis collective members over the use and disposition of collective lands. Furthermore, the authority of the agriculture ministry and of midlevel agricultural managers in overseeing day-to-day agricultural affairs was strengthened in 1979. Both these administrative acts were Government efforts to: (1) smooth the way for agro-industrial consolidation by restricting

^{3/} Tribuna, Number 47, Prague, Nov. 23, 1977.

Table 5--Czechoslovakia: Number of farms, by type and average sizes, 1975 and 1980

Type of farm	Farms		Average size	
	1975	1980	1975	1980
	-- Number --		-- Hectares --	
State	250	200	5,684.00	6,795.0
Collective	2,736	1,722	1,610.00	2,486.0
Private	782,624	<u>1/</u> 715,865	.49	<u>1/</u> .4

1/ Estimate.

Source: Statisticka Rocenka CSR, 1981.

the authority of collective farmers and (2) strengthen central control over the larger agricultural producing and processing enterprises.

However, severe problems with the agro-industrial system of organization became evident in the late seventies. Hoped for increases in production did not occur and central management of agriculture raised neither efficiency nor the technical level of production appreciably. The current policy emphasis is on consolidating the organization and management of existing agro-industrial enterprises rather than on increasing their size or number.

This shift in organizational policy was accompanied by a re-emphasis of private agriculture as a means to increase production, especially of livestock and livestock products. For example, although the Government still officially plans to increase meat supplies primarily through large-scale industrial livestock farms, agricultural authorities have found it necessary to allow state enterprises to contract with individual farmers for cattle and hog raising to increase meat production in the quickest, least expensive manner.

A continued slowdown in the agro-industrial movement is almost certain, given investment constraints and the slow economic growth foreseen through the mideighties.

AGRICULTURAL PRICES AND SUBSIDIES

The Government continues to fix most producer prices in agriculture. However, since 1967, compulsory sales quotas for private farmers and collective and state farms have been replaced by contract buying between farms and purchasing enterprises or procurement agencies. Producer prices for livestock feed, cattle, sheep, and livestock products were increased on January 1, 1981, to improve the profitability and, ultimately, the supply of these products. However, the extent to which higher producer prices will lead to increased output in livestock products

depends largely on the level of investment necessary to expand and further modernize this sector. Producer price changes alone will not lead to significantly increased livestock product output. Nevertheless, higher prices for livestock producers should improve the financial situation of farms in mountainous regions that specialize in livestock production. These farms traditionally have had poor profit margins relative to other farms in Czechoslovakia. 4/

On January 1, 1981, the price of mineral fertilizers was increased. This price increase was made necessary by continuously rising costs of production and was designed to reduce state subsidies for mineral fertilizer production and to shift demand to organic fertilizers such as manure.

As do all East European governments, the Czechoslovak Government subsidizes retail prices of staple foods. The Czechoslovak press has reported that for every 100 crowns (Kcs) of food produced in 1981, state subsidies to producers and/or consumers equaled 40 Kcs (U.S.\$1 = 5.3 Kcs), up from 25 Kcs in 1978. 5/ It is estimated that total retail price subsidies in 1981 will equal 14.6 billion Kcs. Over 80 percent of these subsidies will go toward stabilizing consumer prices for milk, cheese, meat, poultry, and fish. 6/

However, escalating retail price subsidies caused the Government in early 1982 to increase retail prices for most meats by an average 27 percent and for other foods from 18 percent to 100 percent. This increase affected the price of high-quality meat cuts the most and was the first general increase in meat prices since 1954. Although compensation will be provided to those with lower incomes, the predominant effect will be to shift a significant part of the cost of meat consumption to consumers and away from the state.

PRODUCTION

Crops currently account for about 42 percent of the value of gross agricultural production, and livestock's share accounts for 58 percent of gross production. These shares have remained constant over recent years.

Crops

In 1980, grain occupied about 50 percent of arable land, of which 23 percent was wheat and 18 percent was barley. Grain production at 10.7 million metric tons (mmt) was close to the record 1978 level of 10.9 mmt and was 14 percent above the 1971-75 average. Grain area has remained stable, ranging between 2.67 million hectares in 1971 and 2.63 million hectares in 1980 (table 6).

While total grain area has remained stable in recent years, corn and barley area has increased, oat area has decreased,

4/ Hospodarske Noviny, Prague, Sept. 21, 1979.

5/ Rude Pravo, Prague, Jan. 27, 1982.

6/ Hospodarske Noviny, Prague, Jan. 9, 1981.

Table 6--Czechoslovakia: Crop area, yield, and production, 1971-75 average and 1980

Commodity	Area		Yield		Production	
	1971-75	1980	1971-75	1980	1971-75	1980
	average		average		average	
	-- 1,000 hectares --		-- Tons/hectare --		-- 1,000 metric tons --	
Total grain	2,739.0	2,628.3	3.4	3.8	9,349.0	10,700.0
Wheat	1,198.0	1,197.0	3.6	4.1	4,360.0	5,386.0
Barley	885.0	921.2	3.4	3.7	2,991.0	3,575.0
Other	656.0	510.1	3.1	3.4	1,998.0	1,739.0
Oilseeds	59.6	114.0	1.9	2.2	117.8	249.0
Sugar beets	198.0	218.0	35.2	32.3	6,966.0	7,255.0
Tobacco	3.6	4.0	1.5	1.3	5.3	5.0
Potatoes	297.0	199.0	15.4	13.6	4,570.0	2,695.0

Source: Statisticka Rocenka CSR, 1981.

and wheat and rye area has remained constant. Between 1972 and 1980, the area in corn, an important livestock feed, increased 30 percent to 192,000 hectares, while barley area rose 22 percent to 921,000 hectares. In the same period, oat area decreased 52 percent to 139,000 hectares.

Fluctuating grain yields contrast with the overall stable area figures of recent years. Total grain yield varied greatly in the seventies, from 2.76 tons/hectare in 1970 to 4 tons/hectare in 1978. Weather accounts for these fluctuations. The average yield over 1970-79 was 3.4 tons/hectare.

Both potato production and area declined steadily in the seventies. Production in 1980 was 2.7 mmt from 199,000 hectares, the worst in many years, and resulted from unfavorable weather. Average production (3.7 mmt) and area (223,000 hectares) in 1976-80 were 19 and 25 percent, respectively, below average production and area in 1971-75.

Although harvested area of sugar beets, the most important industrial crop in Czechoslovakia, rose steadily in the seventies (218,000 hectares in 1980, up from 178,200 hectares in 1970), output has varied over the period, again because of weather.

Production in 1980 at 7.3 mmt was 9.2 percent higher than in 1970. Sugar beets are currently sown on 4 percent of the arable land.

Rapeseed is the major oilseed grown in Czechoslovakia. Harvested area increased steadily in the seventies, except in 1974 and 1979, resulting in rising annual production. In 1980, rapeseed area of 91,000 hectares was 75 percent higher than in 1970, and production at 214,000 mmt was 240 percent higher than in 1970.

Fruit and vegetable production fluctuated throughout the seventies, but has shown no real growth. Vegetable production in 1980 (755,900 mt) was 17 percent below that in 1970. Fruit production in 1980 (including grapes) was 660,000 mt, slightly above 1970 production. Within Eastern Europe, Czechoslovakia has one of the lowest per capita consumption levels of fruits and vegetables. Although this low level of consumption is unusual for a country with Czechoslovakia's level of development, consumer demand appears low, and the Government has no plans to significantly increase the production of fruits and vegetables in the foreseeable future.

Livestock

Livestock inventories for all animals except sheep and horses were up between 1971 and 1981, although annual figures show no evident pattern of year-to-year increases (table 7). Cattle and hog numbers increased 16.7 and 42.7 percent, respectively, over the period, close to the average for Eastern Europe. Poultry numbers were up 20.7 percent, again, close to the regional average.

In 1980, pork accounted for 51 percent of total meat production. Beef and veal's contribution to total meat production dropped from 38 percent in 1975 to 35 percent in 1980 (table 8). Milk production has increased slightly since 1974 (from 5.46 mmt to 5.9 mmt in 1980).

In recent years, the Government has stressed increased beef production at the expense of pork to lessen demand for imported corn and protein feeds. However, this policy has not yet succeeded as pork continues to be the dominant meat in the country.

Table 7--Czechoslovakia: Livestock numbers as of January 1, 1971-75 average and 1981

Type	1971-75 average	1981
		<u>1,000 head</u>
Cattle	4,445	5,002
Hogs	6,109	7,894
Poultry	39,461	47,283
Sheep	891	850

Source: Statisticka Rocenka CSR, 1981, and other official data.

Table 8--Czechoslovakia: Livestock product production, 1971-75
average and 1980

	:	:
Livestock	:	
product	:	1971-75
	:	average
	:	1980
	:	
	:	<u>1,000 metric tons</u>
	:	
Meat	:	1,618
Milk	:	1,971
	:	5,288
	:	5,909
Wool	:	3,860
	:	<u>1/4,100</u>
	:	
	:	<u>Million</u>
	:	
Eggs	:	3,501
	:	4,900
	:	

1/ Estimate.

Source: Statisticka Rocenka CSR, 1981, and other official data.

Increased domestic production of cattle feeds is intended to lead to larger beef supplies through more nutritionally balanced feeding and through slightly larger cattle inventories.

The official outlook for both the crop and livestock sectors in the period to 1985 is for steady, although slow, increases in output. Crop production will increase faster than livestock production. Output growth in the agricultural sector will be constrained by little planned growth in agricultural investment, by labor shortages plus machine availability problems, and by a declining supply of agricultural land.

INPUTS IN AGRICULTURE

As in most countries of Eastern Europe, agricultural labor in Czechoslovakia is scarce relative to other inputs. Therefore, any increases in production will have to come from a combination of labor productivity improvements, higher capital inputs, and higher yielding plant varieties and livestock types.

Labor

Labor is in extremely short supply throughout Czechoslovakia. Thus, agriculture competes with every other sector in the economy for workers. The size of the agricultural labor force has been declining. It numbered approximately 898,000 people in 1980, 9 percent below the 1974 figure and 34 percent below the level in 1960. This labor force loss has affected private agriculture most. In 1960, 18.9 percent of the agricultural labor force was engaged primarily in private agriculture. This figure dropped to 6 percent in 1974 and to 1.6 percent in 1980.

Although the absolute number of workers on state farms has remained basically unchanged since 1960, their share in the total agricultural labor force has increased from 16.4 to 26.5 percent. In the collective sector, the number of members has fallen 26.5 percent since 1960, but the share of these members in the total agriculture labor force increased from 64.7 percent in 1960 to 71.8 percent in 1980. With the recent halt in the farm consolidation campaign and the already low share of private farmers in the agricultural labor force, little change will occur in the distribution of the agricultural labor force in the near future.

Although the supply of the agricultural labor force has declined over the years, this force is relatively young and well trained by East European standards. Of the agricultural labor force, 45 percent were under 40 years of age in 1980, up from 39 percent in 1975 and from 35 percent in 1970. The relative youth of these workers is the result of a concerted Government policy to raise the level of farm income to that of urban, industrial income. In 1973, for the first time, collective farm income (including income in kind) reached parity with urban, industrial income. However, the income growth rate of the agricultural sector was the lowest of all sectors in 1978 and 1979.

Fertilizer

Use of mineral fertilizers rose from 305 kilograms/hectare of arable land in 1975 to 340 kilograms/hectare in 1980; along with the GDR, Czechoslovakia had the highest application rate in Eastern Europe. ^{7/} This high rate of application has led to reports of increasing ground-water pollution in the country.

Nonetheless, the Government plans to increase fertilizer application rates through 1990, emphasizing more efficient application techniques and added use of less expensive organic fertilizers. More efficient application, a shift to more easily handled and applied liquid fertilizers, and increased production of compound and concentrated varieties, although expensive, are crucial to raising the marginal benefits of increased fertilizer use.

Machinery

In 1980, there was one tractor for every 38 hectares of arable land. The trend in agricultural machinery production in Czechoslovakia, as throughout Eastern Europe, has been toward high-powered, specialized equipment to reduce fuel consumption and increase efficiency. For example, truck production and deliveries to agriculture are expected to increase over the next several years as more and more obsolete tractors are replaced by trucks. Table 9 summarizes the major inputs in Czechoslovak agriculture.

FOOD CONSUMPTION

The average daily caloric intake in Czechoslovakia reached 3,000 calories in the midsixties and climbed to 3,400 calories in the late seventies. Per capita consumption of meat (including

^{7/} Agricultural Situation: Eastern Europe, Review of 1980 and Outlook for 1981. Economics and Statistics Service, U.S. Department of Agriculture, 1981, p. 14.

Table 9--Czechoslovakia: Agricultural inputs, 1970, 1975, and 1980

Item	:	Unit	:	1970	:	1975	:	1980
	:		:		:		:	
Arable land	:	1,000 hectares	:	5,334.0	:	5,257.0	:	5,169.0
Arable land per worker	:	Hectares	:	4.2	:	5.0	:	5.8
Tractors (at year end)	:	Thousands	:	136.0	:	142.0	:	137.0
Arable land per tractor	:	Hectares	:	37.0	:	37.0	:	37.5
Fertilizer consumption	:	1,000 mt active	:		:		:	
	:	substance	:	1,188.5	:	1,548.8	:	1,756.0
Fertilizer consumption per	:		:		:		:	
hectare of arable land	:	Kilograms	:	230.0	:	305.0	:	339.0
	:		:		:		:	

Source: Statistická Rocenka CSR, 1981.

edible offal) of 84 kilograms in 1980 (up from 73.7 kilograms in 1971) was the second highest in Eastern Europe after the GDR. Pork makes up approximately 52 percent of per capita meat consumption, with beef consumption accounting for 30 percent, poultry meat accounting for 13 percent, and veal and mutton making up the remainder.

Grain consumption has dropped 4 percent since 1971, and annual per capita egg consumption (311 eggs) in 1979 was 9 percent higher than in 1971. Even with increased wages and stable prices, consumption of fruits and vegetables increased only slightly in the seventies, the likely result of stagnant supplies and low consumer preference for these foods.

Plans call for per capita meat consumption to increase to 92 kilograms in 1985 and to 94 kilograms in 1990. Milk and egg consumption is slated to rise slightly through 1990 whereas sugar and potato consumption is to decline. However, successful implementation of these plans, especially that for increased meat consumption, is highly problematical because of the tight investment and import constraints and the high costs of livestock production that Czechoslovakia will face in the eighties.

In 1980, the average share of disposable income spent for food per household ranged from 27.0 percent for industrial workers to 26 percent for cooperative farmers and 24.4 percent for professionals (table 10). The share of income spent on food has been declining in recent years as incomes have risen, but food prices (other than those of imported foods and luxuries, such as chocolate) have remained stable because of state subsidies.

FOREIGN TRADE

Czechoslovakia depends heavily on foreign trade. In 1980, total trade was \$30.5 billion, \$15.1 billion in exports and \$15.4 billion in imports, based on the official trade conversion rate of July 1980 of \$1 = 5.30 Kcs. Total trade accounted for approximately 36 percent of GNP in 1980,

Table 10--Czechoslovakia: Per capita disposable income spent on food, 1969 and 1980

Type of worker	:	1969	:	1980
	:		:	
	:		<u>Percent</u>	
Collective farmer	:	28.1		26.0
Industrial worker	:	35.3		27.0
Professional worker	:	31.2		24.4

Source: Statisticka Rocenka CSR, 1981.

slightly more than three times the share for the United States. The bulk of both imports and exports is made up of finished industrial commodities and of raw materials for industry.

Czechoslovakia is a member of the Council for Mutual Economic Assistance (CMEA), the cooperation and trading association of East European countries (except Yugoslavia), the Soviet Union, Cuba, Mongolia, and Vietnam. Trade is regulated with preference given to CMEA members, and most intra-CMEA trade is bilateral. Since the midseventies, Czechoslovakia has been under pressure to increase exports to both hard-currency and CMEA countries. Even though the Soviet Union supplies most of Czechoslovakia's petroleum import needs at below world prices, these prices are nevertheless based on a 5-year moving average of market prices and have risen with the world price. Annually increasing exports to the Soviet Union are required to pay for these imports. The Government has also stressed increased hard-currency exports to reduce the need for hard-currency borrowing connected with agricultural and high-technology product imports.

Czechoslovakia has engaged in hard-currency borrowing from the Eurocurrency markets as have other East European countries, but it has one of the lowest hard-currency debt levels in Eastern Europe--an estimated \$3 billion accumulated by 1980. The debt service ratio is estimated at between 22-26 percent of hard-currency export earnings.

Despite calls for increased trade with the West, slightly under 70 percent of all trade in 1980 was with socialist nations, one of the highest rates in Eastern Europe, whereas only 23 percent was with the West and 56 percent of that was with the European Community. Socialist countries accounted for 70 percent of Czechoslovak imports, and they received 70 percent of all exports. Table 11 lists the 10 major trading partners for 1980.

Table 11--Czechoslovakia: Ten major trading partners, 1980

Country	Turnover ^{1/}	Exports	Imports	Share of total turnover
	-- Million dollars --			Percent
All countries	30,510.0	15,125.1	15,384.9	100.0
Soviet Union	10,966.8	5,422.6	5,544.2	35.9
German Democratic Republic	3,018.5	1,410.6	1,607.9	9.9
Poland	2,304.9	1,137.0	1,167.9	7.6
Federal Republic of Germany	1,810.6	979.1	831.5	5.9
Hungary	1,682.4	813.2	869.2	5.5
Yugoslavia	1,089.6	572.1	517.5	3.6
Austria	953.2	495.8	457.4	3.1
Romania	898.5	457.9	440.6	2.9
Bulgaria	716.5	387.7	328.3	2.3
United Kingdom	699.2	256.0	443.2	2.3

^{1/} Crown-denominated trade figures converted to U.S. dollars at the official Czechoslovak crown-dollar rate for foreign trade as of June 1980 (5.30 Kcs. = U.S.\$1).

Source: Statistické Přehledy, Number 8, 1981.

As the country enters the seventh Five Year Plan, preliminary indications are that Czechoslovak officials have reevaluated the benefits to be obtained from trade with the West in light of disappointing export experiences with these countries and severe hard-currency shortages facing Czechoslovakia. A more sober evaluation of export prospects in the West is likely along with Czechoslovakia's renewed efforts to meet as fully as possible its import requirements from within the CMEA and from other nonconvertible currency countries.

AGRICULTURAL TRADE

Agricultural products accounted for 8.8 percent of total exports in 1980, compared with 8 percent in 1975. In 1980, agricultural and food commodities accounted for 16.2 percent of Czechoslovak imports, the largest percentage in Eastern Europe.

Czechoslovakia's agricultural exports consist largely of brewery products, meat and meat products, sugar, and malt products (table 12). Grain, oilmeal, cotton, vegetable oils, meat and meat products, fruit, and coffee are the leading agricultural imports (tables 13 and 14).

Table 12--Czechoslovakia: Major agricultural exports, 1976-80

Commodity	1976	1977	1978	1979	1980
<u>1,000 metric tons</u>					
Sugar	72	171	300	249	260
Meat and other livestock products	12	10	22	60	54
Malt	201	205	227	242	201
<u>1,000 hectoliters</u>					
Beer	185	204	222	233	215
<u>Millions</u>					
Eggs	123	82	38	5	23

Source: Statisticka Rocenka CSR and FAO Trade Yearbook, various editions.

Table 13--Czechoslovakia: Major agricultural imports, 1976-80

Commodity	1976	1977	1978	1979	1980
<u>1,000 metric tons</u>					
Grain	2,187	1,207	936	2,085	1,960
Concentrated feeds	746	633	749	659	828
Soybeans and sunflower seeds	84	95	75	123	65
Livestock and livestock products	22	31	23	22	31
Cotton	95	117	96	122	114
Fruits and vegetables	414	476	565	491	483
Coffee, tea, and cocoa	42	40	38	39	46

Source: Statisticka Rocenka CSR, various editions.

Czechoslovakia traditionally runs deficits on its agricultural trade balance, as might be expected in a small, highly industrialized nation. This deficit in 1980 was approximately \$1.5 billion, 6 percent below the record deficit of 1979. In the seventies, the deficit fluctuated from year to year. Its magnitude in any given year depended primarily on harvest quality and on size in the preceding year.

Table 14--Czechoslovakia: Source of selected agricultural imports by major major suppliers, 1976-80

[illegible]

-- = Not reported, zero, or insignificant.

1/ 1979 only.

2/ 1980 only.

3/ 1976-79 only.

4/ 1977-80 only.

Source: Statisticka Rocenka CSR, 1980 and 1981.

U.S.-CZECHOSLOVAK TRADE

U.S.-Czechoslovak trade is small, only \$164.2 million in 1981, 53.8 percent below the 1980 level. The United States has historically run substantial trade surpluses with Czechoslovakia, but 1981's surplus, \$29.9 million, was 82.4 percent below the 1980 surplus. This decline represents much smaller Czechoslovak agricultural imports due to good 1980 agricultural performance and a very stringent anti-import policy throughout the economy.

Although Czechoslovakia is a charter member of the General Agreement on Tariffs and Trade (GATT), the United States has not granted it most-favored-nation (MFN) tariff treatment since 1951. As an additional requirement under Title IV of the Trade Act of 1974, Czechoslovakia was ineligible for MFN treatment unless a settlement was reached regarding the claims U.S. citizens and nationals have against it as a result of nationalizations in the late forties. Such an agreement was reached in 1981 and the

appropriate section of the Trade Act was amended, thereby removing an important barrier to improved economic relations. As in the past, U.S. exports of agricultural commodities dominated U.S.-Czechoslovak trade in 1981. U.S. exports of \$97.2 million made up 59 percent of total trade between the two countries; 75 percent of these exports were agricultural commodities (table 15).

The bulk of U.S. agricultural exports to Czechoslovakia consists of feed grains (mostly corn), soybean cake and meal, wheat, and cattlehides. The first two commodities are utilized almost exclusively as feed in the livestock sector. Thus, import demand for these commodities is directly related to the quality and level of grain and oilseed harvests in Czechoslovakia and to planned output growth rates in the livestock sector. U.S. agricultural exports in 1981 (\$73 million) were 64.4 percent below the preceding year because little growth in the Czechoslovak livestock sector, a near-record grain harvest, and a good oilseed harvest in 1980 had reduced the need for livestock feed imports.

Table 15--Czechoslovakia: Agricultural trade with the United States, including transshipments, 1978-81

	:	:	:	:	
Item	:	1978	: 1979	: 1980	: 1981
	:	:	:	:	:
	:	<u>Million dollars</u>			
	:				
U.S. agricultural exports	:	97.2	272.4	205.5	73.0
Grain	:	44.6	177.0	142.9	52.2
Animals and animal products	:	14.4	31.7	9.5	10.5
Soybean meal	:	25.8	57.2	46.3	8.3
Soybeans	:	5.0	.4	.4	0
Tobacco	:	1.8	1.9	.5	0
Other products	:	5.6	4.2	2.9	2.0
	:				
	:				
U.S. agricultural imports	:	6.1	7.7	10.4	12.1
Processed meat	:	3.8	4.4	4.5	4.7
Other products	:	2.3	3.3	5.9	7.4
	:				

Source: Statisticka Rocenka CSR, various editions; U.S. trade data from Export Sales, U.S. Department of Agriculture, Foreign Agricultural Service, various issues; and official statistics of the U.S. Department of Commerce, Bureau of the Census.

The United States supplies over two-thirds of Czechoslovak corn imports and holds significant market shares in other grain, oilseed, and oilmeal imports. However, the United States faces stiff competition from Brazil, for example, in the oilmeal market where the Brazilian market share has risen at the expense of the United States since the midseventies. Lower buying costs in Brazil account for this change. As Czechoslovak concern over imports heightens, U.S. exporters will face rising price and credit competition from other suppliers.

National plans for self-sufficiency in grain production, hard-currency shortages, and little planned growth in output in the livestock sector in the current 1981-85 Five Year Plan indicate stagnating or declining U.S. grain exports to Czechoslovakia. However, domestic oilseed and oilseed meal production will remain well short of Czechoslovak requirements, and imports of these commodities will probably increase through 1985. Any overall increase in the value of U.S. agricultural exports to Czechoslovakia will depend on commodity price increases and poor harvests rather than on any real increase in Czechoslovak demand for U.S. agricultural exports.

Although U.S. exports to Czechoslovakia are dominated by agricultural commodities, U.S. imports are not. In 1981, 82 percent of the value of U.S. imports from Czechoslovakia were manufactured goods, similar to the percentage of previous years; the value of these imports was \$67.2 million in 1981, 35 percent above the 1980 level.

Agricultural imports from Czechoslovakia were valued at \$12.1 million in 1981, 16 percent above the previous year's level. Processed meats (primarily canned hams) and hops made up the bulk of U.S. imports. A rise in both the quantity and the unit price of U.S. imports of hops accounted for this increase in U.S. agricultural imports.

U.S. agricultural imports from Czechoslovakia through 1985 should remain stable as U.S. demand for these imports has shown little real growth historically and the prospect for such growth is nil. Any increase in the value of these imports will most likely come about as a result of unit-price increases.

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ERRATA

P. 1, line 12 should read: U.S. agricultural exports account for almost two-thirds of all U.S.-Czechoslovak trade.

P. 2, line 4 should read: Czechoslovakia's population growth rate was below the rate for Eastern Europe as a whole.

P. 7, line 40 should read: Grain area has remained stable in the seventies, ranging between 2.78 million hectares in 1973 and 2.63 million hectares in 1980 (table 6).

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